

WHAT IS CLAIMED IS:

1. A position measuring system for an elevator installation for determining a position of an elevator car movable along at least one guide rail, comprising:

- 5 a strip having a code mark pattern and adapted to be mounted near the elevator car and parallel to a travel direction of the elevator car;
- a code reading device adapted to be mounted on the elevator car for contactless scanning of said code mark pattern; and
- 10 an evaluating unit connected to said code reading device for evaluating said scanned code mark pattern, wherein "n" successive code marks of said code mark pattern form a code word, a plurality of different ones of said code words are unambiguously arranged in an n-digit pseudo random sequence, said code words form a single-track of said code mark pattern and that each said code word represents an absolute car position.

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2. The position measuring system according to claim 1 wherein said code marks form magnetic poles and said code reading device includes a plurality of Hall sensors for detecting said magnetic poles.

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3. The position measuring system according to claim 1 wherein said code reading device includes a plurality of sensors for simultaneous scanning of said code marks of each of said code words.

4. The position measuring system according to claim 3 wherein said evaluating  
25 unit compares a voltage generated by said sensors with a threshold value.

5. The position measuring system according to claim 1 wherein said code reading device includes a plurality of sensors for detecting code mark transitions, said transitions being arranged in the travel direction over a region of said magnetic strip with  
30 a length greater than a length ( $2\lambda$ ) of two of said code marks and at a spacing smaller than the length ( $\lambda$ ) of one of said code marks.

6. The position measuring system according to claim 1 wherein said code reading device detects at least one transition between said code marks.

7. The position measuring system according to claim 1 wherein said code  
5 reading device scans said code marks with a resolution of the absolute car position corresponding a length of said code marks.

8. The position measuring system according to claim 1 wherein said code reading device detects transitions between said code marks and scans said code marks  
10 with a resolution of the absolute car position of approximately 0.5 mm.

9. The position measuring system according to claim 1 including at least one floor sensor mounted adapted to be mounted on the elevator car for detecting position markings at floor levels along the travel direction, said at least one floor sensor being  
15 connected to said evaluating unit, said evaluating unit evaluating said detected position markings against said scanned code words.

10. The position measuring system according to claim 1 wherein said code reading device is constructed in a redundant manner.  
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11. The position measuring system according to claim 1 wherein said code mark pattern is coded in Manchester coding, wherein each said code mark is combined with an adjoining inverted code mark.

25 12. The position measuring system according to claim 1 wherein said strip is adapted to be mounted at the at least one guide rail.

13. The position measuring system according to claim 1 wherein said code measuring device includes a plurality of sensors arranged in a line parallel to the travel  
30 direction.

14. The position measuring system according to claim 1 wherein said code marks form magnetic poles, said code reading device includes a sensor for detecting a course of a magnetic field of said code mark pattern, and said evaluating unit includes a fine interpolation unit for interpolating said course of said magnetic field in an arc-tangential  
5 manner and for generating a high-resolution position value periodic with a length of said code marks.

15. A position measuring system for an elevator installation for determining a position of an elevator car movable along at least one guide rail, comprising:  
10 a strip having a code mark pattern and adapted to be mounted near the elevator car and parallel to a travel direction of the elevator car;  
a pair of code reading devices adapted to be mounted on the elevator car for contactless scanning of said code mark pattern; and  
a pair of evaluating units each connected to a respective one of said code reading  
15 devices for evaluating said scanned code mark pattern, wherein "n" successive code marks of said code mark pattern form a code word, a plurality of different ones of said code words are unambiguously arranged in an n-digit pseudo random sequence, said code words form a single-track of said code mark pattern and that each said code word represents an  
20 absolute car position.

16. The position measuring system according to claim 15 including at least one floor sensor mounted adapted to be mounted on the elevator car for detecting position markings at floor levels along the travel direction, said at least one floor sensor being  
25 connected to said evaluating units, said evaluating units evaluating said detected position markings against said scanned code words.